

State Permit Number: DM 1908-MD-03

Effective Date: XXXX 1, 2019

Expiration Date: XXXX 31, 2024



AUTHORIZATION TO CONDUCT
A LIMITED DISTRIBUTION AND MARKETING PROGRAM
FOR THE UTILIZATION OF SLUDGE OR SLUDGE PRODUCTS

Pursuant to the provisions of 7 Del. C., §6003

NaturaLawn of America, Inc.
1 E. Church Street
Frederick, MD 21701

is hereby granted authorization to conduct a distribution and marketing program for the utilization of exceptional quality (EQ) biosolids products generated at the Metropolitan Water Reclamation District of Greater Chicago's (MWRDC) Stickney Water Reclamation Plant (Cicero, IL) biosolids drying facility throughout the State of Delaware as specified in this permit.

The general requirements, monitoring requirements and other permit conditions are set forth in Parts I, II and III hereof.

Bryan A. Ashby, Program Manager
Surface Water Discharges Section
Division of Water
Department of Natural Resources
and Environmental Control

Date Signed

GENERAL DESCRIPTION OF OPERATION

Biosolids distributed by NaturaLawn of America has undergone stabilization by heat drying sewage sludge to an EQ biosolids rating. The final product is distributed for use as a fertilizer by lawn care professionals or utilized in agricultural settings.

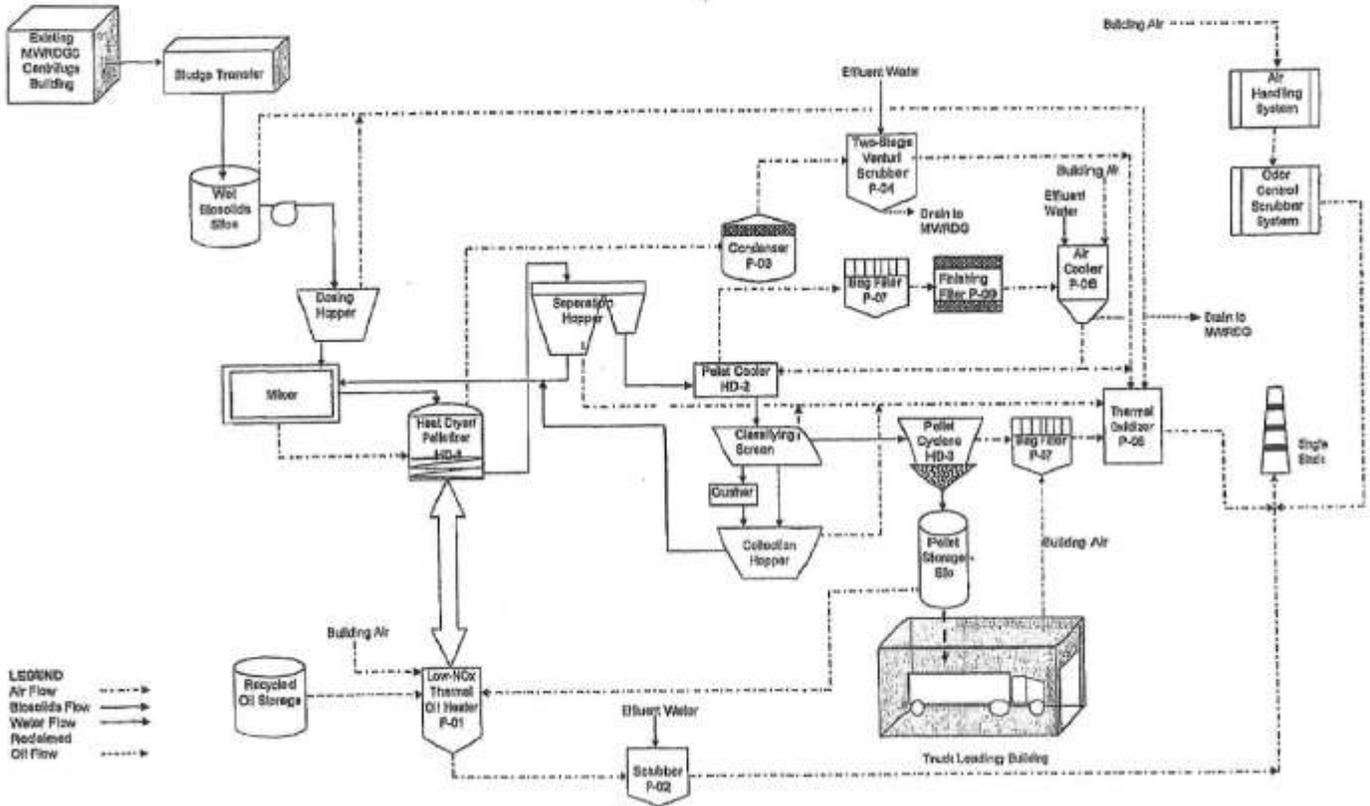
NaturaLawn of America biosolids product is a treated byproduct of the wastewater reclamation process at the Metropolitan Water Reclamation District of Greater Chicago's Stickney Water Reclamation Plant located at Cicero, Illinois (MWRD). MWRD's biosolids treatment serves people living in and around Chicago, Illinois. Metropolitan Biosolids Management, LLC. of Cicero, Illinois (MBM) takes dewatered sludge from MWRD for further processing. MBM heat dries, pelletizes, and through a contract with OT&T, Inc. of Elida, Ohio, distributes the resultant "exceptional quality" biosolids product throughout the United States. Through their blenders, NaturaLawn of America, will distribute these EQ Biosolids for use in the state of Delaware for their commercial applicators and retail market.

At the MWRDC facility, sludge is anaerobically digested to promote biological decomposition (stabilization) of the organic materials in the sludge. Next the sludge is dewatered by centrifugation to produce a cake product consisting of approximately 25% solids. The MBN biosolids facility employs four (4) Keppel Seghers vertical indirect heat dryers to heat the sludge to approximately 215 degrees Fahrenheit. When exiting the dryer, the temperature of the sludge must be at least 80° C (176° F) to demonstrate that Class A pathogen reduction has been achieved. The resultant biosolids product is then required to be dried to a solids content of at least 70% solids to meet vector attraction reduction requirements (VAR).

After EQ biosolids requirements are achieved, the treated sludge is tested and meets the requirements of this permit, and the biosolids meet Delaware Department of Agriculture requirements, the EQ biosolids may be distributed within the State of Delaware by NaturaLawn for use as a fertilizer. NaturaLawn shall be responsible for ensuring all biosolids distributed and marketed within the State of Delaware meet the requirements of this permit.

Heat Drying Process Diagram

Metropolitan Biosolids Management, LLC
Biosolids Heat Drying Plant
Stickney, Illinois
Process Flow Diagram



REGULATORY AND SUPPORTING DOCUMENTS:

The limited distribution and marketing program shall be conducted in accordance with the following documents:

1. The Department's Guidance and Regulations Governing the Land Treatment of Wastes, Part III, (B); (October 1999 Revision);
2. Title 40 of the Code of Federal Regulations Part 503, "Standards for the Use and Disposal of Sewage Sludge";
3. The permit application, dated March 27, 2018;
4. The Project Development Report received by the Department August 6, 2019;
and,
5. Approvals for NaturaLawn biosolids products registered by the Delaware Department of Agriculture.

A. PROGRAM LIMITATIONS

During the period beginning on the effective date and lasting through the expiration date the permittee is authorized to conduct a Distribution and Marketing Program for heat dried EQ biosolids generated at the MWRDC facility that have been processed by the MBM heat drying process. The program limitations are specified below:

Only heat dried sludge originating from the MWRDC facility, which satisfies the EQ requirements as specified in Part III, (B), of the Guidance and Regulation Governing the Land Treatment of Wastes, may be distributed by NaturaLawn under this permit.

Class A Pathogen Reduction by Heat Drying:

The sludge shall be dried by direct or indirect contact with hot gases to reduce the moisture content of the sludge to 10% or lower. Either the temperature of the sewage sludge particles shall exceed 80° C (176° F) or the wet bulb temperature of the gas in contact with the sludge as the sludge leaves the dryer shall exceed 80°C. The permittee shall continuously monitor the temperature of sewage sludge particles for each dryer in production. The permittee shall maintain a daily log of the sewage sludge particle temperature and periods of production for each dryer. Recorded temperatures shall be reported as the average temperature for each compliance thermowell located at each dryer where averaging intervals shall not exceed 15 minutes.

The fecal coliform in the heat dried sludge must be less than 1,000 most probable number per gram of total solids or the density of Salmonella sp. bacteria in the sewage sludge shall be less than three (3) most probable number per four (4) grams of total solids.

Vector Attraction Reduction for All Sludge:

Any sludge product that does not obtain at least one of the pathogen reduction methods above and reach at least 75% solids shall be considered off-spec and shall not be distributed in Delaware. Off spec sludge may be recycled through the dryer to VAR requirements provided it is documented that the sludge achieves pathogen reduction requirements.

Metals and Pathogen Limits:

The sludge product shall also be deemed off-spec if the following pollutant concentrations are exceeded on a dry weight basis:

Pollutant Limits:

Arsenic	41 mg/kg	Cadmium	39 mg/kg	Chromium	1200 mg/kg	Copper	1500 mg/kg
Lead	300 mg/kg	Mercury	17 mg/kg	Molybdenum	18 mg/kg	Nickel	420 mg/kg
PCB's	3 mg/kg	Selenium	36 mg/kg	Zinc	2800 mg/kg	-	-
Fecal Coliform 1000 colonies/gm (MPN)				Salmonella Density (sp) 3/4gm (MPN)			

Additional Requirements

Based upon a review of the data submitted to the Department, the Department may require the permittee to make changes in the product label, may limit the allowable end uses, or may otherwise modify or revoke this permit.

Copies of the product label, as submitted to the Department in the permit application, shall be distributed to each end-user.

Additional end uses of MBM biosolids product distributed by NaturaLawn may be approved by the Department following Departmental written approval of use-specific product label(s).

The permittee shall not knowingly allow any customer to use the EQ biosolids product in any manner which is inconsistent with the product label.

No EQ biosolids product may be stored or applied in a way that causes surface or groundwater pollution, run-on/runoff, cause odor, adversely affect the food chain, attract vectors, or adversely affect private or public water supplies.

B. MONITORING REQUIREMENTS

During the period beginning on the effective date and lasting through the expiration date the permittee is authorized to conduct a Distribution and Marketing program for the EQ biosolids product generated at the MBM facility. Product for distribution and marketing shall be monitored by the permittee as specified below:

B.1 HEAT DRIED SLUDGE PRODUCT

Parameter	Measurement	Minimum Frequency	Sample Type
Moisture content	percent	Daily	Composite
Total Nitrogen as N (dry weight basis)	percent	Monthly	Composite
Organic Nitrogen as N (dry weight basis)	percent	Monthly	Composite
Ammonium as N (dry weight basis)	percent	Monthly	Composite
Nitrate Nitrogen as N (dry weight basis)	percent	Monthly	Composite
Phosphorus (dry weight basis)	percent	Monthly	Composite
Potassium (dry weight basis)	percent	Monthly	Composite
Volatile solids	percent	Monthly	Composite
Fecal Coliform (Colonies/gm)	MPN	Monthly	Composite
pH	S.U.	Monthly	Composite
Arsenic (dry weight basis)	mg/kg	Monthly	Composite
Cadmium (dry weight basis)	mg/kg	Monthly	Composite
Chromium (dry weight basis)	mg/kg	Monthly	Composite
Copper (dry weight basis)	mg/kg	Monthly	Composite
Iron (dry weight basis)	mg/kg	Monthly	Composite
Lead (dry weight basis)	mg/kg	Monthly	Composite
Mercury (dry weight basis)	mg/kg	Monthly	Composite
Molybdenum (dry weight basis)	mg/kg	Monthly	Composite
Nickel (dry weight basis)	mg/kg	Monthly	Composite
Selenium (dry weight basis)	mg/kg	Monthly	Composite
Zinc (dry weight basis)	mg/kg	Monthly	Composite
PCB's (dry weight basis)	mg/kg	Annually	Composite
Priority pollutant scan (see NOTE)	---	Every 3 years	Composite

* Heat dried sludge samples shall be collected at the following location: At MBM after service pellet classifying screens

All processed sludge samples shall be collected and analyzed in accordance with a Quality Assurance Program.

See Part I, F.1. for reporting requirements. The Department may modify the sampling frequency based upon review of continuing or additional analyses.

NOTE: A list of the 126 priority pollutants can be found in 40 CFR, Part 423, Appendix A, 1987.

B.2 HEAT DRIED SLUDGE PRODUCT STABILIZATION AND TREATMENT PROCESS MONITORING

<u>Parameter</u>	<u>Unit Measurement</u>	<u>Minimum Sampling Frequency</u>	<u>Sample Type</u>
Fecal Coliform or Salmonella	MPN (dry weight basis)	Monthly	Composite
Dry Solids Content	%	Daily	Composite

C. SCHEDULE OF COMPLIANCE

None

D. BONDING

1. As a requirement for maintaining this permit, the permittee shall file with the Department a bond or other security on a form approved by the Department. The bond shall be payable to the Department and the obligation of the bond shall be conditioned upon the fulfillment of all requirements related to this permit. Liability under the bond shall remain in effect until the expiration date of this permit. A bond in the amount of \$10,000 shall be executed by the applicant and by a corporate surety licensed to do business in this State. The obligation of the applicant and of any corporate surety under the bond shall become due and payable, and all or any part of any cash or securities shall be applied to payment of the costs of properly fulfilling any requirement of the permit if the Department has:
 - a. Notified the applicant and any corporate surety that the conditions of the permit have not been fulfilled, and specified in the notice the particular deficiencies in the fulfillment of the permit conditions;
 - b. Given the applicant and any corporate surety a reasonable opportunity to correct the deficiencies and to fulfill all of the conditions of the permit; and
 - c. Determined that, at the end of a reasonable length of time, some or all of the deficiencies specified in Part I, D.1, above, remain uncorrected.

E. MONITORING

1. Representative Sampling and Measurements
 - a. Samples and measurements taken as required herein shall be representative of the volume and nature of the sludge product to be distributed and marketed.

- b. All heat dried sludge product must be analyzed for the parameters identified in Part I, B.1, and B.2 of this permit, as applicable, and meet Department requirements prior to distribution.

2. Recording of Results

For each measurement or sample taken pursuant to the requirements of this permit, the permittee shall maintain records of the following information:

- a. The exact place, date and time of sampling and/or measurement;
- b. The person(s) who performed the sampling and/or measurement (if applicable);
- c. The dates of and the analyses that were performed and the time the analyses were begun;
- d. The person(s) who performed the analyses (if applicable);
- e. The results of each analysis, along with the original laboratory report;
- f. The analytical methods employed; and,
- g. The time and result of each measurement.

3. Records Retention

All records and information resulting from the monitoring activities required by this permit, including all records of analyses performed and calibration and maintenance of instrumentation and recording from continuous monitoring instrumentation, shall be retained for five (5) years. This period of retention shall be extended automatically during the course of any unresolved litigation regarding the regulated activity or regarding control standards applicable to the permittee, or as requested by the Department.

F. REPORTING

1. Monthly Report

- a. Sludge product analytical and stabilization process monitoring data obtained during the previous one (1) month shall be summarized for each month and postmarked no later than the 28th day of the month following the completed reporting period. Signed copies of these, and all other reports required herein, shall be submitted to the Department electronically or at the following address:

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL, DIVISION OF WATER, SURFACE WATER DISCHARGES SECTION, 89 KINGS HIGHWAY, DOVER, DELAWARE 19901 TELEPHONE: (302) 739-9946

When submitting monitoring results, copies of the original laboratory sheets shall be included. If more than one sample is analyzed during any month, a table showing the range of constituent concentration values shall be prepared and included with the submittal. Monthly reports may be submitted electronically or in any format specified by the Department.

- b. Temperature monitoring of the sludge product as required in Part I, B.2 of this permit shall be submitted in the monthly report upon request by the Department.

2. Annual Report

The permittee shall submit to the Department an annual report to include the date, customer, shipping destination and quantity per customer for all sludge products distributed during the previous year. The annual report may be submitted electronically or in any format specified by the Department. The annual report shall be due on February 1 of each year, and the information contained in the report shall cover the previous calendar year.

3. Test Procedures

Test procedures for laboratory analyses shall conform to the applicable test procedures identified in Section 152 of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, Title 40, Code of Federal Regulations, Part 503, Subsection 503.8 and to the applicable test procedures identified in the Quality Control Program.

G. DEFINITIONS

1. "Class A" means sludge that has undergone a process to further reduce pathogens (PFRP) in Part III, B. of the Department's Guidance and Regulations Governing the Land Treatment of Wastes.
2. "Composite" means a series of grab samples which have been collected in a manner such that the final sample is representative of the volume and characteristics of the sludge to be distributed.
3. "Distribute" means to barter, sell, offer for sale, consign, furnish, provide, or otherwise supply a material as part of a commercial enterprise or giveaway program.
4. "Exceptional Quality Biosolids" ("EQ Biosolids") sludge that has been stabilized by a process to further reduce pathogens (PRFP), meets Vector Attraction Reduction Requirements, and contains lower metal concentrations than the allowable Pollutant Concentration levels.
5. "Food chain crops" means tobacco, crops grown for human consumption, and crops grown to feed animals whose products are consumed by humans.
6. "Handling" means any way in which sludge, treated sludge, or any other product containing these materials is dealt with, other than collection, burning, storage, treatment, land application, disposal, or transportation. It includes distribution of treated sludge.
7. "Heat dried sludge product" means sludge which has undergone processing to meet Class A standards that is verified by testing and/or monitoring.
8. "Label" means the display of all written, printed, or graphic material on the immediate container, or information accompanying the material.
9. "Landfill" means a natural topographic depression, man-made excavation or diked area formed primarily of earthen materials, which has been lined with man-made materials or remains unlined and which is designed to hold an accumulation of solid wastes.
10. "Person" means an individual, trust, firm, joint stock company, federal agency, corporation (including a government corporation), partnership, association, state, municipality, commission, political subdivision of a state, or any interstate body.
11. "Sewage" means water-carried human or animal wastes from septic tanks, water closets, residences, buildings, industrial establishments, or other places, together with such groundwater infiltration, subsurface water, admixture of industrial wastes or other wastes as may be present.

12. "Sewage sludge" means sludge which derives in whole or in part from sewage.
13. "Sludge" means the accumulated semi-liquid suspension, settled solids, or dried residue of these solids that is deposited from (a) liquid waste in a municipal or industrial wastewater treatment plant, (b) surface or ground waters treated in a water treatment plant, whether or not these solids have undergone treatment. Septage is included herein as sludge.
14. "Solid waste" means any garbage, refuse, rubbish, and other discarded materials resulting from industrial, commercial, mining, agricultural operations and from community activities which does not contain free liquids. Containers holding free liquids shall be considered solid waste when the container is designed to hold free liquids for use other than storage (e.g. radiators, batteries, transformers) or the waste is household waste.
15. "Storage" means the interim containment of sludge, treated sludge, or any other product containing these materials after removal from the wastewater and before disposal or utilization.
16. "Treatment" means a process which alters, modifies or changes the biological, physical, or chemical characteristics of sludge or liquid waste.
17. "Vector Attraction Reduction (VAR)" means sludge that undergone one of the requirements for VAR in Part III, B. of the Department's Guidance and Regulations Governing the Land Treatment of Wastes.

Part II

A. MANAGEMENT REQUIREMENTS

1. Noncompliance Notification

The permittee shall report to the Department:

- a. In writing, thirty (30) days before any planned change to the sludge treatment process or the distribution and marketing program, if that change would result in any alterations to the program as represented in the permit application.
- b. In writing thirty (30) days before any anticipated change which would result in noncompliance with any permit condition, the Guidance and Regulations Governing the Land Treatment of Wastes or 40 CFR, Part 503, Standards for the Use and Disposal of Sewage Sludge.
- c. Orally within twenty-four (24) hours from the time the permittee became aware of any noncompliance which may endanger the public health or the environment, at (800) 662-8802. In addition, a call must be placed at (302) 739-9946 during normal business hours, and;
- d. In writing as soon as possible but within five (5) days of the date the permittee knows or should know of any noncompliance unless extended by the Department. This report shall contain:
 - 1) A description of the noncompliance and its cause;
 - 2) The period of noncompliance including to the extent possible, times and dates and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and,
 - 3) Steps taken or planned to reduce or eliminate reoccurrence of the noncompliance.
- e. In writing as soon as possible after the permittee becomes aware of relevant facts not submitted or incorrect information submitted, in a permit application or any report to the Department. Those facts or the correct information shall be included as a part of this report.

2. Minimize Impacts

The permittee shall take all necessary actions to eliminate and correct any adverse impact on the public health or the environment resulting from permit noncompliance.

B. RESPONSIBILITIES

1. Renewal Responsibilities

At least 180 days before the expiration date of this permit, the permittee shall submit a new application for a permit or notify the Department of the intent to cease operation of the distribution and marketing program by the expiration date. In the event that a timely and sufficient reapplication has been submitted and the Department is unable, through no fault of the permittee, to issue a new permit before the expiration date of this permit, the terms and conditions of this permit are automatically continued and remain fully effective and enforceable.

2. Entry and Access

The permittee shall allow the Department, consistent with 7 Del. C., Chapter 60, to:

- a. Enter the permitted facility;
- b. Inspect any records that must be kept under this permit;
- c. Inspect any facility, equipment, practice, or operation permitted or required by this permit; and,
- d. Sample or monitor for the purpose of assuring permit compliance, any substance or any parameter at the facility or land application site.

3. Provide Information

The permittee shall furnish to the Department within a reasonable time, any information requested, including copies of records, which may be used by the Department to determine whether cause exists for modifying, revoking, reissuing, or terminating the permit, or to determine compliance with the permit or Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes.

4. Transfer of Ownership or Control

This permit shall be transferable to a new owner or operator provided that the permittee notifies the Department by requesting a minor modification of the permit before the date of transfer and provided that the transferee shows evidence of a legal right to use the site and is otherwise in compliance with all applicable provisions of the Department's Guidance and Regulations Governing the Land Treatment of Wastes.

5. Operation of Facility

The permittee shall at all times properly maintain and operate all structures, systems, and equipment for treatment, control and monitoring, which are installed or used by the permittee to achieve compliance with 7 Del. C., Chapter 60, this permit, or Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes.

6. Permit Revocation and Modification

a. After notice and opportunity for a hearing, this permit may be modified or revoked in whole or in part during its term for causing including, but not limited to, the following:

- 1) Violation of any terms or conditions of this permit;
- 2) Obtaining this permit by misrepresentation or failure to disclose fully all of the relevant facts;
- 3) Any change in operating conditions that requires either a temporary or permanent permit modification; or
- 4) If the Department finds that the public health, safety or welfare requires emergency action, the Department shall incorporate findings in support of such action in a written notice of emergency revocation issued to the permittee. Emergency revocation shall be effective upon receipt by the permittee. Thereafter, if requested by the permittee in writing, the Department shall provide the permittee a revocation hearing and prior notice thereof. Such hearings shall be conducted in accordance with 7 Del. C., Chapter 60.

b. The Department may revoke this permit if the permittee violates any permit condition, any provisions of Part III, (B), of the Guidance and Regulations Governing the Land Treatment of Wastes, or fails to pay applicable Department fees.

7. State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation.

8. Property Rights

The issuance of this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any

infringement of Federal, State or local laws or regulations.

9. Severability

If any provision of this permit is held invalid, the remainder of this permit shall not be affected. If the application of any provision of this permit to any circumstance is held invalid, its application to other circumstances shall not be affected.

10. Compliance Required

The permittee shall comply with all conditions of the permit.

11. Reopener

In the event that the Part III, B, of the Guidance and Regulations Governing the Land Treatment of Wastes or applicable Federal Regulations are revised, this permit may be reopened and modified accordingly after notice and opportunity for a public hearing.

Part III

A. SPECIAL CONDITIONS

1. The Facility must comply with the Federal Code of Regulations, Title 40, Part 503, "Standards for the Use and Disposal of Sewage Sludge" in the production, distribution and management of the sludge products.
2. Product label sheets, as submitted to the Department in the permit application, shall be distributed to each end-user.